Technical Data Report

for

PEDRA HUME CAÁ

Myrcia salicifolia
Myrcia sphaerocarpa

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Pedra hume caá

Preprinted from *Herbal Secrets of the Rainforest,* 2nd edition, by Leslie Taylor

Family: Myrtaceae

Genus: *Myrcia*

Species: *salicifolia, uniflorus, sphaerocarpa*

Synonyms: *Aubmyrcia salicifolia.*

Common Names: Pedra hume caá, pedra-ume-caá, insulina vegetal

Parts Used: Aerial parts, leaves

Pedra hume caá is a medium-sized shrub that grows in drier regions of the Amazon and other parts of Brazil. It has small, green leaves and large, orange-red flowers. A member of the myrtle family, it is one of more than 150 species of *Myrcia* indigenous to tropical South America and the West Indies. In Brazil, the common name *pedra hume caá* refers to three species of *Myrcia* plants which are used interchangeably—*Myrcia salicifolia, M. uniflorus,* and *M. sphaerocarpa*.

Pedra hume caá has been used by indigenous tribes in the rainforest for diabetes, diarrhea, and dysentery. The Taiwanos tribe (in northwest Amazonia) considers the leaves to be astringent and use it for persistent diarrhea. It has had a place in Brazilian traditional medicine for many years. Dr. G. L. Cruz, a leading Brazilian practitioner and herbalist, nicknamed it “vegetable insulin” in 1965. Dr. Cruz noted in his book *Livro Verde das Plantas Medicinais e Industriais do Brasil* that “one uses all parts of the plant in infusions, decoctions or extracts to combat diabetes. Specialists that have made careful study of medicinal plants affirm that the regular use of this plant produces surprising results in the treatment of this ailment, as in a short space of time the sugar disappears from the urine. Hence the name ‘vegetable insulin.’” Even 30 years later, Dr. Cruz and other Brazilian researchers and practitioners are recording the actions and uses of pedra hume caá for diabetes in much the same manner. It remains a very popular natural remedy for diabetes throughout South America; traditional use is a simple leaf tea with a pleasant, slightly sweet taste. It is also used for diarrhea, hypertension, enteritis, hemorrhages, and mouth ulcers.

Phytochemical analysis of pedra hume caá reveals a high content of flavonoids, flavonols and flavanones, and some benzenoids. In 1998 Japanese researchers reported the discovery of several novel and biologically active phytochemicals. These new flavanone glucosides were named *myrciacitrins I* and *II;* the new acetophenone glucosides were named *myrciaphenones A* and *B.*[1] Their published study reported that a methanol extract of pedra hume caá (as well as these novel chemicals) demonstrated potent inhibitory activities on aldose reductase and alpha-glucosidase. The novel compounds were seen to be (at least partially) responsible for pedra hume caá’s blood-sugar-balancing properties.[1] (Aldose reductase inhibitors [ARIs] are substances that act on nerve endings exposed to high blood sugar concentration to prevent some of the chemical imbalances that occur and thus protect the nerves. Alpha-glucosidase inhibitors delay the digestion and subsequent absorption of sugar in the gastrointestinal tract.) Various ARIs (both synthetic and natural) are being studied by researchers; it is believed that these compounds may be helpful in reducing or preventing some side effects of diabetes—including diabetic neuropathy and macular degeneration. Other flavonoids found in pedra hume caá (notably quercitrin, myricitrin, guaijaverin, and desmanthin) also have shown in numerous studies to inhibit aldose reductase and xanthine oxidase (xanthine oxidase inhibitors block the production of uric acid).[2–5]

Brazilian scientists have documented leaf extracts of pedra hume caá with hypoglycemic activity since 1929.[6-10] Two clinical studies published in the 1990s again demonstrated its hypoglycemic activity and confirmed its traditional use for diabetes. In a 1990 double-blind placebo clinical study

with normal and Type II diabetic patients, pedra hume caá (3 g powdered leaf daily) demonstrated the ability to lower plasma insulin levels in the diabetic group.[11] In a 1993 study, 250 mg/kg of a leaf extract demonstrated the ability to reduce polyphagia, polydipsia, urine volume, and urinary excretion of glucose and urea in diabetic rats. The extract also inhibited the intestinal absorption of glucose. This study concluded that "aqueous extracts of *Myrcia* have a beneficial effect on the diabetic state, mainly by improving metabolic parameters of glucose homeostasis."[12]

Pedra hume caá continues to be one of the more popular natural remedies for diabetes throughout South America, where it is widely known. The studies with animals and humans have confirmed its safety and no toxic effects or side effects were noted. It is hoped that, with the growing diabetes epidemic in North America, health practitioners here will look for natural alternatives and incorporate this wonderful rainforest remedy into their natural health practices. These tropical shrubs grow very quickly and growth is encouraged by pruning. A single shrub can be harvested of it leaves by hard pruning 4 times a year or more; producing approximately 50-60 kg of leaves annually. It is truly a wonderful and sustainable resource the rainforest offers!

Documented Properties and Actions: Aldose reductase inhibitor, alpha-glucosidase inhibitor, antidiabetic, antidysenteric, antioxidant, astringent, diuretic, hypoglycemic

Main Phytochemicals: Beta-amyrin, catechin, desmanthin, gallic acid, ginkgoic acid, guaijaverin, mearnsitrin, myrciacitrin I-V, myrciaphenone A, myrciaphenone B, myricitrin, quercitrin.

Traditional Remedy: One-half cup to 1 cup of leaf infusion 2–3 times daily with meals. One to 2 g of leaf powder in tablets or capsules with meals can be substituted if desired.

Contraindications: Pedra hume caá has been documented to have a hypoglycemic effect in animal and human studies. It is contraindicated in those with hypoglycemia. Diabetics who wish to use this plant should seek the advice and supervision of a qualified health care practitioner while using this plant, as blood sugar levels will need to be monitored carefully and medications may need adjustments.

Pedra hume caá has been used in South American herbal medicine for hypertension.This use has not been substantiated or confirmed by clinical research. Those with low blood pressure and/or those on medications to lower their blood pressure should use this plant with caution and closely monitor these possible effects.

Drug Interactions: May potentiate antidiabetic medications and insulin drugs. May potentiate antihypertensive medications.

WORLDWIDE ETHNOBOTANICAL USES

Region	Uses
Amazonia	Astringent, diarrhea, emetic
Brazil	Astringent, bradycardia, diabetes, diarrhea, diuretic, dysentery, enteritis, glucosuria, hemorrhages, hypertension, ulcers (mouth)

References

1. Yoshikawa, M., et al. “Antidiabetic principles of natural medicines. II. Aldose reductase and alpha-glucosidase inhibitors from Brazilian natural medicine, the leaves of *Myrcia multiflora* DC (myrtaceae): structures of myrciacitrins I and II and myrciaphenones A and B.” *Chem. Pharm. Bull*. 1998; 46(1): 113–19.
2. Schmeda-Hirschmann, G., et al. “Preliminary pharmacological studies on *Eugenia uniflora* leaves: xanthine oxidase inhibitory activity.” *J. Ethnopharmacol*. 1987; 21(2): 183–86.
3. Varma, S. D., et al. “Flavonoids as inhibitors of lens aldose reductase.” *Science* 1975; 188(4194): 1215–16.
4. Matsuda, H., et al. “Structural requirements of flavonoids and related compounds for aldose reductase inhibitory activity.” *Chem. Pharm. Bull.* (Tokyo). 2002; 50(6): 788–95.
5. Chaudhry, P. S., et al. “Inhibition of human lens aldose reductase by flavonoids, sulindac and indomethacin.” *Biochem. Pharmacol*. 1983; 32(13): 1995–98.
6. Martins de Toledo, O. *Tese de Doutoramento*. Faculdade de Medicina de São Paulo. São Paulo, Brazil, 1929.
7. Coutinho, A. B. *Tese de Catedra.* Faculdade de Medicina de Recife. Recife, Brazil, 1938.
8. Mendes dos Reis Arruda, L., et al. “Efeito hipoglicemiante induzido pelo extracto das raizes de *Myrcia citrifolia* (PEDRA-HUME-CAÁ), esudo famacologico preliminar.” *V Simposio de Plantas Medicinais do Brasil*, São Paulo-SP, Brazil, 1978; 74 (September 4–6).
9. Brune, U., et al. “*Myrcia spaerocarpa,* D.C., planta diabetica.” *V Simposio de Plantas Medicinais do Brasil*, São Paulo-SP, Brazil, 1978; 74 (September 4–6).
10. Grune, U., et al. “Sobre o principio antidiabetico da pedra-hume-caá, *Myrcia multiflora* (Lam).” Thesis 1979; Federal University of Rio de Janeiro.
11. Russo, E. M., et al. “Clinical trial of *Myrcia uniflora* and *Bauhinia forficata* leaf extracts in normal and diabetic patients.” *Braz. J. Med. Biol. Res.* 1990; 23(1): 11–20.
12. Pepato, M. T., et al. “Assessment of the antidiabetic activity of *Myrcia uniflora* extracts in streptozotocin diabetic rats.” *Diabetes Res.* 1993; 22(2): 49–57.

Ethnomedical Information on Pedra Hume Caá (Myrcia salicifolia)

Plant Part / Location	Documented Ethnic Use	Type Extract / Route	Used For	Ref #
Leaf Brazil	Used for diabetes.	Hot H2O Ext Oral	Human Adult	H21579
Leaf Brazil	Used for diabetes.	Decoction Oral	Human Adult	M29305
Leaf Brazil	Inhibits the absorption of glucose. Used as an antidiabetic.	Infusion Oral	Human Adult	ZZ1099
Leaf Brazil	Adult-onset diabetes; called 'vegetable insulin.' Used to eliminate sugar from the urine of diabetics and to treat diarrhea.	Not stated	Human Adult	ZZ1014
Leaf Brazil	Used for diabetes. Is considered 'vegetable insulin.' Used for diarrhea, enteritis, hemorrhage and for its antagnoism to bradycardia. Used as a hypoglycemic, diuretic, and hypotensive.	Decoction Oral	Human Adult	ZZ1002
Leaf Brazil	Used as an astringent and for diabetes.	Decoction Oral	Human Adult	ZZ1007
Entire Plant Brazil	Used for diabetes; called 'vegetable insulin.'	Infusion Oral	Human Adult	ZZ1013
Leaf Amazonia	Used for persistent diarrhea. Used as an astringent, and in excess as an emetic.	Leaf powder oral	Human Adult	ZZ1005
Leaf Brazil	Used as an astringent. Used for diabetes; known as 'vegetable insulin.'	Decoction Oral	Human Adult	ZZ1070
Leaf Brazil	Used for diabetes; known as 'vegetable insulin.'	Not stated	Human Adult	ZZ1015
Leaf Brazil	Used for diabetes; known as 'vegetable insulin.'	Not stated	Human Adult	ZZ1016

Biological Activities for Extracts of Pedra Hume Caá (Myrcia salicifolia)

Part – Origin	Activity Tested For	Type Extract	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Leaf Origin Not Stated	Antihyperglycemic Activity	Infusion	Human Adult Oral	Not Stated	Active	These data are from a review article.	J12034
Leaf Brazil	Antihyperglycemic Activity	Infusion	Human Adult Oral	3.0 g leaf/day.	Inactive	Tested In Type II diabetic patients over 56 days.	M29305
Leaf Brazil	Antihyperglycemic Activity	MeOH Ext	IG Mouse	1.0 g/kg	Inactive	vs. alloxan-induced hyperglycemia.	H21579
Leaf Brazil	Antihyperglycemic Activity	MeOH Ext	IG Rat	250.0 mg/kg	Active		H21579
Leaf Brazil	Insulin Modifying Effect	Hot H2O Ext	Oral Rat	60 mg dried leaf or 7.5 mg powder	Inactive	No effect on serum or pancreatic insulin.	AR1002
Leaf Brazil	Glucose Absorption Inhibition	Hot H2O Ext	Oral Rat	60 mg dried leaf or 7.5 mg powder	Active	Inhibited intestinal absorption of glucose.	AR1002
Leaf Brazil	Glucose Absorption Inhibition	Not stated	Rat (ileum)	Not stated	Active	Inhibited the absorption of glucose.	AR1001
Leaf Brazil	Aldose Reductase Inhibition	MeOH Ext	Not Stated	LC50: 1.08 mcg/ml	Active		H21579
Leaf Brazil	Maltase Inhibition	MeOH Ext	Not Stated	LC50: 225.0 mcg/ml	Active		H21579
Leaf Brazil	Sucrase Inhibition	MeOH Ext	Not Stated	LC50: 128.0 mcg/ml	Active		H21579
Leaf Brazil	Antiobesity Agent	Hot H2O Ext	Oral Rat	60 mg dried leaf or 7.5 mg powder	Inactive	No effect on the weight of epididymal and retroperitoneal adipose tissue.	AR1002
Leaf Brazil	Antiobesity Agent	Hot H2O Ext	Oral Rat	60 mg dried leaf or 7.5 mg powder	Inactive	No effect on the weight of epididymal and retroperitoneal adipose tissue.	AR1002

GI = Gastric Intubation IG = Intragastric IP = Intraperitoneally IV = Intravenously SC = Subcutaneously IM = Intramuscular

Biological Activities for Compounds of Pedra Hume Caá (Myrcia salicifolia)

Compound	Activity Tested For	Test Model	Dosage	Result	Notes/Organism tested	Ref #
Guaijaverin	Aldose Reductase Inhibition	Cell Culture (human lens)	IC50=2.5x10(-6) M	Active		AR1003
Quercitrin	Aldose Reductase Inhibition	Cell Culture (human lens)	IC50=1x10(-6) M	Active		AR1003
Quercitrin	Aldose Reductase Inhibition	Cell Culture (rat lens)	Not stated	Active		AR1005
Myricitrin	Aldose Reductase Inhibition	Cell Culture (rat lens)	Not stated	Active		AR1005
Quercitrin	Aldose Reductase Inhibition	Cell Culture (rat lens)	IC50=0.15 microM	Active		AR1006
Guaijaverin	Aldose Reductase Inhibition	Cell Culture (rat lens)	IC50=0.18 microM	Active		AR1006
Desmanthin	Aldose Reductase Inhibition	Cell Culture (rat lens)	IC50=0.082 microM	Active		AR1006
Quercitrin	Xanthine Oxidase Inhibition	Not stated	Not stated	Active		AR1004
Myricitrin	Xanthine Oxidase Inhibition	Not stated	Not stated	Active		AR1004

Presence of Compounds in Pedra Hume Caá (Myrcia salicifolia)

Compound	Chemical Type	Plant Part	Plant Origin	Quantity	Ref #
Beta-Amyrin	Triterpene	Leaf	Brazil	00.01142%	H21579
Catechin (+)	Flavonoid	Leaf	Brazil	00.00022%	H21579
Desmanthin	Flavonol	Leaf	Brazil	00.00062%	H21579
Gallic Acid	Benzenoid	Leaf	Brazil	00.01276%	H21579
Ginkgoic Acid	Benzenoid	Leaf	Brazil	00.00034%	H21579
Guaijaverin	Flavonol	Leaf	Brazil	00.00048%	H21579
Mearnsitrin	Flavonol	Leaf	Brazil	00.00156%	H21579
Myrciacitrin I	Flavanone	Leaf	Brazil	00.02328%	H21579
Myrciacitrin II	Flavanone	Leaf	Brazil	00.00042%	H21579
Myrciacitrin III	Flavanone	Leaf	Brazil	00.0019%	H21579
Myrciacitrin IV	Flavanone	Leaf	Brazil	00.012%	H21579
Myrciacitrin V	Flavanone	Leaf	Brazil	00.00028%	H21579
Myrciaphenone A	Benzenoid	Leaf	Brazil	00.00018%	H21579
Myrciaphenone B	Benzenoid	Leaf	Brazil	00.00148%	H21579
Myricitrin	Flavonol	Leaf	Brazil	00.00346%	H21579
Quercitrin	Flavonol	Leaf	Brazil	00.00582%	H21579

Literature Cited – Pedra Hume Caá (Myrcia uniflora)

J12034	PLANTS WITH HYPOGLYCEMIC ACTIVITY IN HUMANS. ERNST,E: PHYTOMEDICINE 4 1: 73-78 (1997) (DEPT COMPLEMETNARY MED POSTGRAD MED SCH UNIV EXETER EXETER ENGLAND)
M29305	CLINICAL TRIAL OF MYRCIA UNIFLORA AND BAUHINIA FORFICATA LEAF EXTRACTS IN NORMAL AND DIABETIC PATIENTS. RUSSO,EMK: REICHELT,AAJ: DE-SA,JR: FURLANETOO,RP: MOISES,RCS: KASAMATSU,TS: CHACRA,AR: BRAZ J MED BIOL RES 23 1: 11-20 (1990) (DISCIPLINA ENDOCRINOLOGIA ESCOLA PAULISTA DE MEDICINA SAO PAULO SP 04034 BRAZIL)
H21579	ANTIDIABETIC PRINCIPLES OF NATURAL MEDICINES. II. ALDOSE REDUCTASE AND ALPHA-GLUCOSIDASE INHIBITORS FROM BRAZILIAN NATURAL MEDICINE, THE LEAVES OF MYRCIA MULTIFLORA DC. (MYRTACEAE): STRUCTURES OF MYRCIACITRINS I AND II AND MYRCIAPHENONES A AND B. YOSHIKAWA,M: SHIMADA,H: NISHIDA,N: LI,Y: TOGUCHIDA,I: YAMAHARA,J: MATSUDA,H: CHEM PHARM BULL 46 1: 113-119 (1998) (KYOTO PHARM UNIV KYOTO 607 JAPAN)
H29452	ANTIDIABETIC PRINCIPLES OF NATURAL MEDICINES. V. ALDOSE REDUCTASE INHIBITORS FROM MYRCIA MULTIFLORA DC. (2): STRUCTURES OF MYRCIACITRINS III, IV, AND V. MATSUDA,H: NISHIDA,N: YOSHIKAWA,M: CHEM PHARM BULL 50 3: 429-431 (2002) (KYOTO PHARM UNIV KYOTO 607 JAPAN)
ZZ1002	PLANTAS MEDICINAIS BRAZILEIRAS, CONHECIMENTOS POPULARES E CIENTIFICOS. ALMEIDA, DE E.R: SAO PAULO: HEMUS EDITORA LTDA (1993)
ZZ1005	THE HEALING FOREST: MEDICINAL AND TOXIC PLANTS OF THE NORTHWEST AMAZONIA. SCHULTES, RE AND RAFFAUF: PORTLAND: R.F. DIOSCORIDES PRESS (1990)
ZZ1007	MANUAL DE FITOTERAPIA, 2ND ED: COIMBRA, RAUL: SAO PAULO, BRAZIL: DADOS INTERNACIONAIS DE CATALOGACAO NA PULICACAO (1994)
ZZ1013	DICIONARIO DAS PLANTAS UTEIS DO BRAZIL, 5TH ED: CRUZ, GL: RIO DE JANEIRO: BERTRAND (1995)
ZZ1014	HERBS OF THE AMAZON: TRADITIONAL AND COMMON USES: SCHWONTKOWSKI, DONNA: UTAH: SCIENCE STUDENT BRAINTRUST PUBLISHING (1993)
ZZ1015	WORLD PRESERVATION SOCIETY. POWERFUL AND UNUSUAL HERBS FROM THE AMAZON AND CHINA. GAINESVILLE, FL: THE WORLD PRESERVATION SOCIETY, INC (1993)
ZZ1016	TRADITIONAL USES OF RAINFOREST BOTANICALS. EASTERLING,J: (1993)
ZZ1070	A POCKETBOOK OF BRAZILIAN HERBS. BERNARDES, ANTONIO. RIO DE JANEIRO: A SHOGUN EDITORA E ARTA LTDA (1984)
ZZ1099	MEDICINAL PLANTS OF BRAZIL. MORS, WB: RIZZINI,CT: PEREIRA, NA: ALGONAC, MICHIGAN, REFERENCE PUBLICATIONS INC (2000)
AR1001	SOBRE O PRINCIPIO ANTIDIABETICO DA PEDRA-HUME-CAA, MYRCIA MULTIFLORA (LAM). GRUNE, U.DC. THESIS, FEDERAL UNIVERSITY OF RIO DE JANEIRO. (1979)

AR1002	ASSESSMENT OF THE ANTIDIABETIC ACTIVITY OF MYRCIA UNIFLORA EXTRACTS IN STREPTOZOTOCIN DIABETIC RATS. PEPATO,MT: OLIVEIRA,JR: KETTELHUT,IC: MIGLIORINI,RH: DIABETIC RES. 22 2: 49-57 (1993) (DEPT OF BIOCHEMISTRY, SCHOOL OF MEDICINE, UNIVERSITY OFSAO PAULO, RIBEIRAO PRETO, BRAZIL)
AR1003	INHIBITION OF HUMAN LENS ALDOSE REDUCTASE BY FLAVONOIDS, SULINDAC AND INDOMETHACIN. CHAUDHRY,PS: CABRERA,J: JULIANI,HR: VARMA,SD: BIOCHEM PHARMACOL 32 13: 1995-8 (1983)
AR1004	PRELIMINARY PHARMACOLOGICAL STUDIES ON EUGENIA UNIFLORA LEAVES: XANTHINE OXIDASE INHIBITORY ACTIVITY. SCHMEDA-HIRSCHMANN,G: THEODULOZ,C: FRANCO,L: FERRO,E: DE ARIAS,AR: J ETHNOPHARMACOL 21 2: 183-6 (1987) (FACULTAD DE CIENCIEAS QUIMICAS, UNIVERSDIAD NACIONAL DE ASUNCION, PARAGUAY)
AR1005	FLAVONOIDS AS INHIBITORS OF LENS ALDOSE REDUCTASE. VARMA,SD: MIKUNI,I: KINOSHITA,JH: SCIENCE 188 4194 1215-6 (1975)
AR1006	STRUCTURAL REQUIREMENTS OF FLAVONOIDS AND RELATED COMPOUNDS FOR ALDOSE REDUCTASE INHIBITORY ACTIVITY. MATSUDA,H: MORIKAWA,T: TOGUCHIDA,I: YOSHIKAWA,M: CHEM PHARM BULL (TOKYO) 50 6: 788-95 (2002) (KYOTO PHARMACEUTICAL UNIVERSITY, JAPAN)

CLINICAL ABSTRACTS

Chem Pharm Bull (Tokyo) 2002 Mar;50(3):429-31
Antidiabetic principles of natural medicines. V. Aldose reductase inhibitors from Myrcia multiflora DC. (2): Structures of myrciacitrins III, IV, and V.
Matsuda H, Nishida N, Yoshikawa M.
Kyoto Pharmaceutical University, Japan.
Following the characterization of myrciacitrins I and II and myrciaphenones A and B, three new flavanone glucosides, myrciacitrins III, IV, and V, were isolated from the leaves of Brazilian Myrcia multiflora. The structures of new myrciacitrins were elucidated on the basis of physicochemical and chemical evidence. Myrciacitrins were found to show potent inhibitory activity on aldose reductase.

Chem Pharm Bull (Tokyo) 1998 Jan;46(1):113-9
Antidiabetic principles of natural medicines. II. Aldose reductase and alpha-glucosidase inhibitors from Brazilian natural medicine, the leaves of Myrcia multiflora DC. (Myrtaceae): structures of myrciacitrins I and II and myrciaphenones A and B.
Yoshikawa M, Shimada H, Nishida N, Li Y, Toguchida I, Yamahara J, Matsuda H.
Kyoto Pharmaceutical University, Japan.
The methanolic extract and ethyl acetate-soluble portion from a Brazilian natural medicine, the leaves of Myrcia multiflora DC., which has been used as a specific medicine against diabetes, were found to show inhibitory activities on aldose reductase and alpha-glucosidase and on the increase of serum glucose level in sucrose-loaded rats and in alloxan-induced diabetic mice. From the ethyl acetate-soluble portion, new flavanone glucosides, myrciacitrins I and II, and new acetophenone glucosides, myrciaphenones A and B, were isolated together with several known compounds such as five flavonol glycosides, myricitrin, mearnsitrin, quercitrin, desmanthin-1, and guaijaverin. The structures of new compounds were determined on the basis of physicochemical and chemical evidence. The principal components of this natural medicine including new glucosides, myrciacitrin I and myrciaphenone B, were found to show potent inhibitory activities on aldose reductase and alpha-glucosidase.

Diabetes Res 1993;22(2):49-57

Assessment of the antidiabetic activity of Myrcia uniflora extracts in streptozotocin diabetic rats.

Pepato MT, Oliveira JR, Kettelhut IC, Migliorini RH.

Department of Biochemistry, School of Medicine, University of Sao Paulo, Ribeirao Preto, Brazil.

Several metabolic parameters were used to determine the evolution of the diabetic state of streptozotocin diabetic rats treated with aqueous leaf extracts from Myricia uniflora, a plant widely used in northern Brazil for treatment of diabetes. The effect of the extracts on the intestinal absorption of glucose and on the evolution of diabetes of diabetic rats adapted to a high protein, carbohydrate-free diet were also investigated. Treated rats received twice a day, by gavage, during three weeks, 7.5 mg of lyophilized powder, corresponding to about 60 mg of dried leaves, prepared from percolations with boiled water, Treatment of diabetic rats fed a stock, balanced diet did not affect body weight gain but reduced the hyperglycemia, polyphagia, polydipsia, urine volume and the urinary excretion of glucose and urea. Myrcia administration for 3 weeks had no effect on the weight of epididymal and retroperitoneal adipose tissue, or on the concentrations of pancreatic and serum insulin. The intestinal absorption of glucose, measured with a perfusion technique in situ, was markedly inhibited by Myrcia (7.5 mg of lyophilized powder per ml of perfusion solution). The effects of Myrcia treatment on diabetic rats adapted to a carbohydrate-free diet were similar to those obtained in rats fed the stock diet. The data show that aqueous extracts of Myrcia has a beneficial effect on the diabetic state, mainly by improving metabolic parameters of glucose homeostasis.

Braz J Med Biol Res 1990;23(1):11-20

Clinical trial of Myrcia uniflora and Bauhinia forficata leaf extracts in normal and diabetic patients.

Russo EM, Reichelt AA, De-Sa JR, Furlanetto RP, Moises RC, Kasamatsu TS, Chacra AR.

Disciplina de Endocrinologia, Escola Paulista de Medicina, Sao Paulo, Brasil.

1. Myrcia uniflora and Bauhinia forficata were compared with placebo for their hypoglycemic effect in randomized cross-over double-blind studies in 2 groups of normal subjects (10 subjects each) and 2 groups of Type II diabetic patients (18 in the M. uniflora group and 16 in the B. forficata group). The protocol with each plant lasted 56 days. 2. After the ingestion of infusions of 3 g leaves/day of M. uniflora and B. forficata leaves, no acute or chronic effects on plasma glucose levels or glycated hemoglobin were found in either group. However, plasma insulin levels in the diabetic group were lower after M. uniflora than after placebo. 3. Among other clinical parameters tested, a statistically significant difference was found only in the alkaline phosphatase level after placebo compared with that after M. uniflora in the normal group. 4. There were no differences in any clinical parameters after the use of placebo or of B. forficata. 5. We conclude that infusions prepared from the leaves of M. uniflora or B. forficata have no hypoglycemic effect on normal subjects or Type II diabetic patients.